

# An Exploratory Study of the Critical Success Factors of One-to-One Web-Marketing: User Perspectives

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**ABSTRACT.** Dell provides personalized marketing services through the Internet (Fischer et al., 2000). This type of application of the Internet is referred to as One-to-One Web-marketing. A review of the current literature relevant to information management and marketing revealed that, relative to other topics, research into this area is lacking. This study addresses this by exploring the Critical Success Factors (CSF) of One-to-One Web-marketing from the user's perspective. It employed a triangulation method of integrating qualitative and quantitative designs in a three-stage research process. The research results revealed that there are five Critical Success Factors of One-to-One Web-marketing from the user perspectives: (1) the

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satisfaction of customer requirements, (2) the identification of customer differentiation, (3) the design of a quality user interface, (4) the establishment of customer recognition, and (5) the provision of customized services. doi:10.1300/J179v05n03\_07 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]

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## INTRODUCTION

Janda and Fair (2004) show that the importance of the Internet continues to grow in our society. At a time when the trend towards One-to-One marketing was not yet obvious, Peppers and Rogers (1993) suggested that this type of marketing would become important for many companies. One-to-One Web-marketing is defined as acquiring quantities of customer information by enterprises, through the use of the Internet (Oppliger, 2000). This information is used to determine the requirements of the targeted customers and provide marketing services through the Internet that meet these specific requirements (Jarach, 2002). One-to-One Web-marketing is critical in determining the success of enterprises in the electronic commerce (e-commerce) era (Allen et al., 2001).

If enterprises want to increase their competitiveness and operating performance, they must satisfy the critical success factors (CSF) of One-to-One Web-marketing and understand user requirements (Winoograd and Woods, 1997). A survey of past academic research into One-to-One Web-marketing revealed that the majority of research investigates One-to-One Web-marketing from the enterprise perspective. Recent research examines issues such as the methods for implementing and developing One-to-One Web-marketing; applying Information Technology (IT) to One-to-One Web-marketing (Dean, 1998; Peppers et al., 1999; Kandell, 2000; Allen et al., 2001; Flor and Maglio, 2004); and discussions on how enterprises can develop stronger customer relationships through the Internet (Pedraza, 2000; Brendler and Loyle, 2001; Hansotia, 2002; Janda and Fair, 2004). In a related stream of research, the majority of authors investigate the user perspectives of One-to-One Web-marketing as related to online shopping or the effects

of One-to-One Web-marketing on customer satisfaction and loyalty (Mehta and Sivadas, 1995; Menon and Kahn, 2002; Forsythe and Shi, 2003). Research focusing specifically on user perspectives to investigate the CSF of One-to-One Web-marketing services is almost nonexistent.

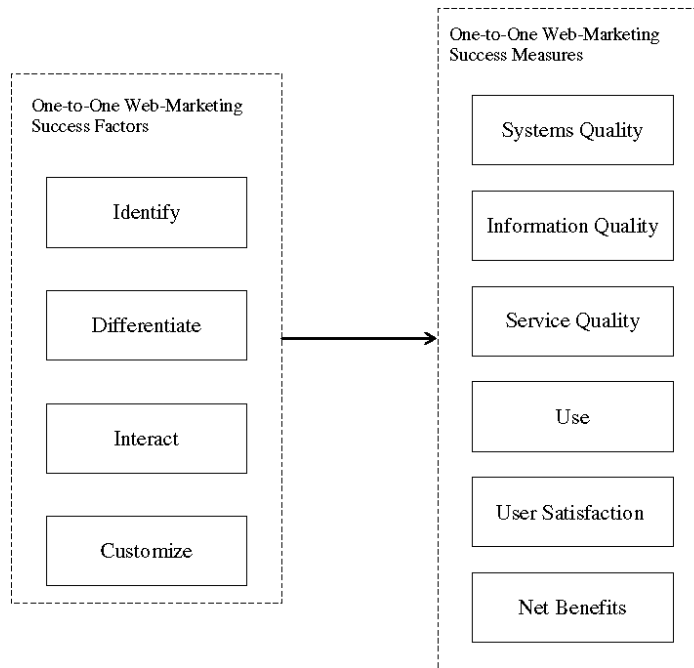
In order to fully investigate this concept, this study employed an exploratory study method. First, user perspectives were taken into consideration to understand the possible factors that could influence One-to-One Web-marketing. After identifying these important factors, a questionnaire was developed (see Appendix). The quantitative data was analyzed and empirically validated. In this way, the CSF of One-to-One Web-marketing services were explored. These factors and the measures of successful One-to-One Web-marketing services were used to gain an in-depth understanding of the correlation between these factors and successful One-to-One Web-marketing services. In addition to supplementing deficiencies in the existing body of literature and contributing to subsequent studies, it is hoped that the businesses will utilize the research conclusions deduced from this study in developing their own One-to-One Web-marketing strategies (see Figure 1).

## ***LITERATURE REVIEW***

### ***Definition of One-to-One Web-Marketing***

One-to-One Web-marketing refers to the use of the Internet to engage in Customer Relationship Management with the primary objective of attracting, maintaining, and strengthening relations with customers by focusing on unique customer requirements to provide customized products or services (Goff, 2000; Peppers and Rogers, 2000) in order to increase customer satisfaction (Allen et al., 2001). Understanding customer requirements (Jarach, 2002) would include gathering information such as what customers require, when they require it, with what method they will acquire it, and how much they are willing to spend to acquire it (Newell, 1999). As expressed by Jarach (2002), from the enterprise view, providing customized services is of the greatest importance. To do this requires treating each customer differently according to their requirements (Newell, 1999), identifying target groups through the use intelligent databases, then

FIGURE 1. Research Structure



communicating a specific message in a timely manner to the appropriate subjects (Peppers and Rogers, 1993).

### ***Critical Success Factors***

Critical success factors were initially proposed by Daniel (1961) and popularized within the discipline of information systems by Rockart (1979). However, in recent years, the CSF approach has been applied to a variety of disciplines as a means of verifying those elements that stand out as being of the utmost importance. As Rockart (1979) noted, if these CSFs are met, then it will become feasible for an enterprise to enhance its overall operational results and ensure a competitive edge for the future.

### ***One-to-One Web-Marketing Success Factors***

As Peppers et al. (1999) proposed, there are four necessary steps for enterprises implementing One-to-One Web-marketing: (1) Know who the e-commerce site customers are (Identify); (2) understand individual characteristics and values (Differentiate); (3) provide customers with different mechanisms and channels for interaction (Interact); and (4) provide tailor-made products and services to satisfy each customer's different and potential requirements (Customize). These four steps are summarized in Table 1. However, as these steps are based on the enterprise perspective, this study also conducted focus group interviews with users to identify other relevant measurement factors of One-to-One Web-marketing. These user perspectives were used to develop the questionnaire.

### ***One-to-One Web-Marketing Success Measures***

In the specific case of One-to-One Web-marketing, there are many factors that influence success. Furthermore, discovering the methods by which successful One-to-One Web-marketing projects are accomplished is dependent on appraising and characterizing the primary influence factors and appropriately addressing these factors. Accordingly, this study adopts the CSF method and utilizes user perspectives to investigate the relationship between the independent variables (success factors) and the dependent variables (One-to-One Web-marketing success).

Current research relevant to measuring One-to-One Web-marketing success from the perspective of users is still in its infancy. Therefore, an appropriate measurement instrument has yet to be developed. However, Peppers and Rogers (2000) stated that One-to-One Web-marketing services engage in CRM through the Internet and the use of information technology. Accordingly, this study uses the constructs suggested by DeLone and McLean (2003): systems quality, information quality, service quality, use, user satisfaction, and net benefits; and combines these with the content of the focus group interviews to develop questionnaire items related to One-to-One Web-marketing.

## ***RESEARCH DESIGN***

Cooper and Emory (1995) proposed the use of exploratory studies to allow researchers to develop clearer concepts, establish an order of pri-

TABLE 1. Success Factors of One-to-One Web-Marketing

One-to-One Marketing	Assessment Content	Literature
Identify	Provide gifts to induce customers to register proactively Establish individual databases Collect additional customer information	Peppers et al. (1999); Thompson (1999); Liu and Arnett (2000); Peppers and Rogers (2000); Jun and Cai (2001); Wixom and Watson (2001); Aldlaigan and Buttle (2002); Jelassi and Leenen (2003)
Differentiate	Proactively analyze customer information Satisfy customer service requirements Select customers worthy of dealing with Provide services directed at customer differences Differentiate customer e-commerce site contributions Understand customers' e-commerce site consumption	Peppers et al. (1999); Pedraza (2000); Peppers and Rogers (2000); Jarach (2002); Jelassi and Leenen (2003); Teo and Yeong (2003); Lassar (2005); Kung et al. (2006)
Interact	Provide an easy user interface Provide links to other e-commerce sites Provide product order tracing Provide for rapid acquisition of required product catalogue Proactively contact target customers Provide relevant community links Provide mechanisms for enterprise-customer interaction, e.g., chat room.	Peppers et al. (1999) ; Peppers and Rogers (2000) ; Allen et al. (2001); Ind and Riondino (2001); Jun and Cai (2001); Jarach (2002); DeLone and McLean (2003); Lepkowska-White et al.(2004); Kung et al. (2006)
Customize	Eliminate customers' need to re-enter personal information Inquire as to how customers wish to contact the e-commerce site Provide dedicated individual e-commerce site space Provide personalized e-mail Inquire of customers how to improve products and services Provide functions for addressing customer complaints Provide product order tracing Provide personalized product information Provide customized service to save the customer time Recommend dedicated products to individual customers Provide a user interface that conforms to all requirements Satisfy the services that the customer wants	Peppers et al. (1999); Liu and Arnett (2000); Peppers and Rogers (2000) ; Jarach (2002); Menon and Kahn (2002); Flor and Maglio (2004); Chae and Lee (2005); Rajamma (2005)

ority and strengthen subsequent research designs. Bryman (1992) went a step further and suggested that if qualitative and quantitative data prove each other, it is possible to increase the reliability of the research conclusions. Accordingly, this study adopts a combined qualitative and

quantitative method, or what is referred to as the triangulation method (Burgess, 1993), to explore relevant issues. The study is divided into three stages.

### ***Stage 1: Focus Group Interviews***

Strauss and Cobin (1990) pointed out that it is possible to use a focus group interview approach to unearth the success factors of One-to-One Web-marketing. The most commonly used method of choosing focus group participants is convenience sampling. The reason for this is that this type of sampling can save both time and money (Stewart and Schamdasani, 1990). The samples were selected from four campuses of Taiwan's largest educational training center in Taipei, Hsinchu, Taichung, and Kaohsiung. The study first determined both that the participants were willing to be interviewed and that they had experience in One-to-One Web-marketing. After determining their willingness to participate, the interview participants were divided into groups, with the size limited to six or seven people. After eliminating subjects that failed to arrive, the actual number of participants was 38. The groups of participants included 26 males and 12 females, and ranged in age from 19 to 35.

As Peppers et al. (1999) indicated, a high or low level of Internet use is an important factor in measuring consumer familiarity with the Internet. Therefore, this study categorized participants in accordance with their Internet experience. After discussions in this area with scholars and professionals, it was decided that the groups should be divided according to the following three criteria: (1) years of experience in using the Internet, (2) frequency of Internet use, and (3) average duration of Internet use per session. Those participants whose Internet use experience exceeds four years and who go online on average more than six times a week, or who spend more than two hours on average during each online session were categorized as highly experienced Internet users ( $n = 25$ ). All others were categorized as having low Internet experience ( $n = 13$ ). Six focus group interview sessions were conducted. The interviewers first explained the research procedure to the participants. Each interview session lasted for an average of 100 minutes. After the interview, participants received related course curriculum, and books were presented as an expression of gratitude for their participation.

After acquiring the data from each interview session, the researchers used content analysis, proposed by Merriam (1998), to explore the inherent significance of the data. This study invited two researchers with relevant experience to categorize and summarize the data. After the data

were formed into key concepts, discussions with the scholars and professionals mentioned above took place regarding the naming of the concepts. The results were incorporated into the questionnaire in order to increase its comprehensiveness and validity (see Table 2).

### *Stage 2: Quantitative Investigative Questionnaire*

#### *Questionnaire Design*

The questionnaire was divided into four parts with the first part consisting of requests for general information. According to Tull and Hawkins (1990), the first part of a questionnaire should be the simplest to answer. Thus, in this part of the questionnaire, the participants were

TABLE 2. Constructs from Interview Sessions

One-to-One Marketing	Assessment Content
Identify	Proactively update customer information (new finding) Provide gifts to induce customers to register proactively Establish individual databases
Differentiate	Provide customers unexpected services (new finding) Satisfy customer service requirements Select customers worthy of dealing with Provide services directed at customer differences
Interact	Have off-line payment for example cash on delivery (new finding) Provide clear on-line product catalogue (new finding) Create flawless transaction security mechanisms (new finding) Have mechanisms for guaranteeing information security (new finding) Provide an easy user interface Provide product order tracing Proactively contact target customers Provide relevant community links Provide mechanisms for enterprise-customer interaction, for example, chat room.
Customize	Let customers feel e-commerce sites are designed for themselves (new finding) Inquire as to how customers wish to contact the e-commerce site Provide dedicated individual e-commerce site space Provide personalized e-mail Provide functions for addressing customer complaints Provide product order tracing Provide personalized product information Provide customized service to save the customer time Recommend dedicated products to individual customers Provide a user interface that conforms to all requirements Satisfy the services that the customer wants



asked nine basic demographic type questions. The second part of the questionnaire was concerned with consumer familiarity with One-to-One Internet services. It was focused on the functions that One-to-One Internet services need to provide in the opinion of consumers. This part of the study contained 35 questions (see Tables 1 and 2). The third part (six questions) consisted of understanding the categories of One-to-One Internet services, and asked consumers which services they were willing to accept, which they considered most attractive and to which they were most receptive.

Before part four of the questionnaire, there was a question item asking consumers about their previous One-to-One Web-marketing services experiences, for example, One-to-One advertising, One-to-One cross-selling, One-to-One information, One-to-One service, One-to-One community, or One-to-One Internet experiences. For the purpose of sample filtering, an affirmative response to one of the experiences was necessary for inclusion in the sample. Only then was the measurement of the success or failure of One-to-One Web-marketing conducted. The fourth section, designed to inquire of the participants whether or not One-to-One Web-marketing is successful, contained 24 question items. This section also contained an open-ended question to provide the respondents with a place where they could point out potential omissions in the study.

In the questionnaire, 5-point Likert scales were used to measure the attitude of the respondents. Additionally, for each question, "Don't know" was designed as a selection choice for the respondents in order to avoid the occurrence of a situation where the respondents would be unable to fill in a response. During the coding, the method proposed by Boyd et al. (1989) was adopted so that "Don't know" was dealt with as a separate category.

### ***Pre-Test***

Following the design of the questionnaire, the researchers invited two PhD students and four MA students from the National Taiwan University of Science and Technology, and four individuals from the earlier focus groups to read and complete the questionnaire. They were encouraged to write down any comments or suggestions they felt necessary. Later, one-to-one meetings were arranged with each participant to discuss relevant items. Each discussion lasted between 30 minutes to one hour. The pre-test results determined those question items which needed modification, amendment, or elimination. After changes were made to

ensure that the relevant questions were clearly conveyed, the pre-test participants reviewed and voiced support for these changes.

### ***Sampling Design***

Questionnaires were distributed to the National Taiwan University of Science and Technology (100 questionnaires), Takming College (260), Yuan Ze University (108), Soochow University (312), and Lunghwa University of Science and Technology (250). Additionally, in order to increase the universal applicability of the research results, questionnaires were distributed (270 questionnaires) through the assistance of the vice-president of the Nova Information Concourse. As the number of question items contained in the questionnaire was relatively high, and in order to increase the rate-of-return, reliability and validity, a small gift was given to the participant. In total, 1,300 questionnaires were distributed and 1,254 were returned, representing a return rate of 96%.

## ***RELIABILITY AND VALIDITY***

### ***Reliability***

According to Reaves (1992), researchers can use small-scale test-retest experiments to evaluate the reliability of research instruments and thus ensure the reliability through pre-testing. In light of this, this study invited those four participants, who had recently participated with the researchers in the focus group, to again fill out the questionnaire. Their answers were verified against their previous answers and it was determined that the content of their answers were similar. In addition to this, in the analysis of the complete data set (see Table 3), the range of the Cronbach Alpha values of the five factors extracted were from 0.72 to 0.84 which demonstrates that the questionnaire has a high level of reliability (Nunnally, 1967).

### ***Validity***

The development of the research constructs was done by investigating the literature and conducting focus group interviews with 38 professionals. Although determining content validity is relatively subjective, it is believed that the research constructs used in this study have a high level of content validity. As to the criterion validity, if there is a positive

TABLE 3. Business People Engaged in One-to-One Web-Marketing Data

Number	Sex	Company	Job Title	One-to-One Web-marketing experience in years
1.	M	Consumer information provider website	Vice-President	3
2.	M	Internet equipment provider website	Vice-President	4
3.	M	Online shopping e-commerce site	General Manager	3
4.	M	Cosmetics direct sales e-commerce site	General Manager	3
5.	M	Information discussion forum provider website	General Manager	3
6.	M	Internet advertising provider website	Internet Business Manager	5
7.	M	Internet service provider website	Director-General of Business	5
8.	M	Internet service provider website	Project Manager	3
9.	M	High-tech investment Internet discussion website	General Manager	3

correlation between the CSF, forged out of the factor analysis, and successful One-to-One Web-marketing; then the criterion validity of the factor is proven. This study utilized factor analysis to measure construct validity, an approach that is used extensively by researchers (Churchill et al., 1974). According to the data analysis, we can show the measurement results of this study have clear construct validity (see Table 4) and criterion validity (see Tables 4 and 5).

### *Stage 3: Validating Interview*

The third stage of the study was the validating interview. The purpose of this stage was to discuss the conclusions of this study with business people that have actually administered One-to-One Web-marketing. The researchers first sent the research conclusions to ten business people engaged in One-to-One Web-marketing (see Table 3), then conducted telephone or in-person interviews with these individuals. The primary content of the interviews was discussions on whether the re-

TABLE 4. Sample Structure: One-to-One Web-Marketing Services

Sex	Education level	Daily average time spent on browsing internet		Method of encouraging consumers to provide information	
M 509	Elementary school or Lower 2	Less than 1 h	153	Free rewards	15.6%
F 646	Middle school 4	1~3 h	666	Prizes or gifts	24.7%
	High school 141	4~6 h	240	Convenient purchasing	14.6%
	College 956	7~9 h	59	Process merchandise	9.4%
	Undergraduate MA or higher 52	10~12 h	16	Merchandise coupons discount	1.0%
		>12 h	21		
Factor best able to influence Online purchases				Method of Payment Consumers Willing to Use	
Convenient ordering process		53.6%		COD	67.1%
Short delivery time		30.5%		Credit cards	9.3%
Detailed product description		49.7%		Postal remittance	6.9%
Product price		67.7%		Bank account transfers	13.2%
Secure credit card		37.5%		Payment installments	1.9%
Transactions wide product category		35.7%			
Convenient product searching		35.1%			

search conclusions were helpful to them in their current and future One-to-One Web-marketing applications. Participants were also asked to explain possible implications of the research conclusions. The interviews lasted from 20 to 40 minutes.

## DATA ANALYSIS

### *Data Collection and Analysis*

A total of 1,254 questionnaires were returned and each was carefully examined for problems. After filtering and screening, 99 of the returned questionnaires were removed, leaving 1,155 valid questionnaires. Demographics related to the sample are shown in Table 4.

TABLE 5. Extraction of Factors

Factor	Activities	Factor Loadings	Alpha Value	Corrected Item-Total Correlations	Cumulative Percentage
Satisfaction of customer requirements	Satisfy customer service requirements	0.77		0.65	
	Provide services for satisfying customer requirements in a timely manner	0.76	0.84	0.70	35.56
	Create a flawless transaction security mechanism	0.75		0.68	
	Provide functions for addressing customer complaints	0.69		0.64	
	Possess mechanisms for guaranteeing information security	0.64		0.65	
Identification of customer differentiation	Provide service directed at customer differences	0.75		0.72	
	Proactively analyze customer information	0.68	0.80	0.63	52.94
Design of a quality interface	Provide links to other e-commerce sites	0.75		0.62	
	Provide relevant community links	0.64	0.72	0.70	57.71
	Provide a user interface that conforms to all requirements	0.62		0.66	
Establishment of customer recognition	Allow customers to have a sense of belonging to the e-commerce site	0.81		0.77	
	Allow the customers to feel that the e-commerce site is designed for them	0.80	0.80	0.77	61.90
Provision of customized services	Offer gifts to induce customers to register proactively	0.77		0.63	
	Recommend products dedicated to individual customers	0.68		0.62	
	Provide dedicated individual e-commerce site space	0.66	0.73	0.62	65.46
	Provide mechanisms for enterprise-customer interaction	0.64		0.66	

### ***Factor Analysis***

Principal components factoring was used to extract common factors. The common factors that were selected all have eigenvalues greater than 1.0 and the varimax solution is used to conduct an orthogonal rotation process. After the raw data were subjected to factor analysis, all of those factors that had an item-total correlation of greater than 0.6 and whose factor loading was greater than 0.6 were kept (we kept 16 items and deleted 19 items).

Table 5 summarizes the results of the study's factor analysis. Altogether, five factors with an accumulated explained variance of 65.46% were identified. In addition, the item-total correlation of each factor serves as the criterion validity measurement index (Madu et al., 1996). The item-total correlation value of each item in this study was above 0.6, which suggests that the results of the measurement scales conform to the criterion validity standard. The Kaiser-Meyer-Olkin (KMO) index of this study is 0.906 and the Bartlett's test is significant (Approx. Chi-Square = 10035.21, Sig = 0.00), which demonstrates that the measurement results of this study have clear construct validity.

#### ***Factor 1: Satisfaction of Customer Requirements***

This factor includes satisfying customer service requirements, providing services for satisfying customers requirements in a timely manner, creating a flawless transaction security mechanism, providing functions for addressing customer complaints, and possessing mechanisms for guaranteeing information security Shergil and Chen (2004) pointed out that many researchers have conducted surveys to explore what consumers want and what factors are regarded as obstacles to the development of online shopping. Chae and Lee (2005) also show users' experience with the Internet is becoming more mature, portals have attempted to develop smarter search engines that provide more "relevant" information with less searching time (e.g., Google). As expressed by Liu and Arnett (2000), a successful e-commerce site must first provide high-quality services that include making available all information that customers require (Rajamma, 2005), establishing security mechanisms, and handling customer questions. Van Amstel et al. (2000) also asserted that the basis of One-to-One Web-marketing is whether it can provide information and services that truly conform to customer requirements. The better an e-commerce site is able to provide services that conform to customer requirements, the more attrac-

tive it is to customers. One respondent's comment that "One-to-One Web-marketing can provide services that satisfy customer requirements in a timely manner and effectively increase the user willingness" supported these positions.

Additionally, lack of customer confidence in the security of online transactions is still regarded as one of the major limiting factors in e-commerce growth (Payne, 2002). When an e-commerce site provides customized information, security becomes the factor which customers pay the most attention to (Oppliger, 2000). It should be noted that security is of two types—information security and transaction security. One respondent underscored the importance of security by stating that "It is only if there is a flawless security mechanism that we dare become members." Another respondent agreed that "regardless of to what degree an e-commerce site provides customization, if the transaction environment is not secure, this will lead to us not wanting to use it."

Additionally, enterprises can use customer complaint channels to understand customer requirements and enterprise shortcomings (Harrison-Walker, 2001). One respondent confirmed, "Providing us with a place to lodge complaints when we are unsatisfied, allows the enterprises to understand customer thoughts on their product services, and, on the one hand, gives the enterprises an opportunity to make up for the complaints."

Accordingly, e-commerce sites can increase the likelihood of customer acceptance of One-to-One Web-marketing services by satisfying customer requirements and the services that they want in a timely manner. This can be facilitated by providing comprehensive security mechanisms and appropriate customer complaint functions.

### ***Factor 2: Identification of Customer Differentiation***

This factor includes providing services that are directed at customer differences and proactively analyzing customer information. Shanks and Darke (1998) pointed out that e-commerce sites which provide One-to-One Internet services must differentiate the true requirements of customers through analysis of customer information. Peppers and Rogers (2000) stated that when e-commerce sites provide appropriate One-to-One Web-marketing services in accordance with customer differences, both the customer and the organization benefit and the objectives of implementing One-to-One Web-marketing are met. As stated by one respondent "Providing services that are different than those provided to others ought to be the basic requirement of One-to-One Web-marketing."

Additionally, as proposed by Newell (2000), the principle of One-to-One Web-marketing lies in learning and analyzing customer information from each interactive experience, then giving individual customers personalized services to strengthen the customer relationship. One respondent stated, "I hope that e-commerce sites can proactively analyze my information so as to provide me with the services that I want as rapidly as possible." As a result, One-to-One Web-marketing needs to use customer information to analyze customer requirements and use those data in the e-commerce site to provide personalized service aimed at individual customers.

### ***Factor 3: Design of a Quality User Interface***

This factor includes providing links to other e-commerce sites, providing relevant community links, and providing a user interface that conforms to all requirements. Liu and Arnett (2000) demonstrated that a successful e-commerce site needs to provide data and services in accordance with customer requirements and have a system design which is secure, entertaining and equipped with a convenient search engine. As one respondent pointed out, "At times we want to join other Internet communities but don't know which, so it is better if an e-commerce site is able to proactively increase One-to-One links, or at least provide some other community links for us to choose for ourselves." Moreover, according to Dean (1998), a user interface which is able to attract consumer use will increase consumers' willingness to use it. One respondent highlighted the importance of a user-friendly interface by stating, "It is good if user interfaces have a simpler design and allow customers to grasp them more easily; otherwise, an interface that is not very easy to use or one that does not conform to customer requirements will lower the willingness of customers to use it". Therefore, e-commerce sites need to provide links to other e-commerce sites and communities and provide a user interface which conforms to customer requirements and expectations.

### ***Factor 4: Establish Customer Recognition***

This factor includes allowing customers to have a sense of belonging to the e-commerce site and allowing customers to feel that the e-commerce site is designed for them. Hansotia (2002) pointed out that enterprises need to focus their resources on key customers to produce awareness that the e-commerce site is designed for them. This will achieve a higher likelihood that customers will return to their site and



increase customer identification with the selling enterprise. As one respondent stated, "Feeling that I am a member of a enterprise community will cause me to visit it when I have time and for no reason in particular." Another respondent provided further insight into giving customers a sense of ownership: "In running a community, an e-commerce site that gives me a lot of authority and allows me to dictate many things will let me feel that this e-commerce site is mine." Consequently, organizations providing One-to-One Web-marketing services must consider how to increase customer recognition with the e-commerce site.

#### ***Factor 5: Provision of Customized Services***

This factor includes recommending products dedicated to individual customers, providing dedicated individual e-commerce site space, providing mechanisms for enterprise-customer interaction, and offering gifts to induce customers to register proactively. Jarach (2002) stated that e-commerce sites need to recommend products and services in accordance with customer requirements. One respondent's experience confirmed this: "One-to-One Web-marketing needs to be able to proactively recommend the products which I want similar to the way that the Commonwealth Publishing Group e-commerce site will proactively tell me which recently published books are suitable for me. I often buy books online because it recommends them to me." Moreover, Dean (1998) stated that providing One-to-One Web-marketing services can provide pages dedicated to individual customers to allow those individuals to accept services in a webpage with which they are familiar. As one respondent pointed out, "I am very clear where things are in layouts that I have designed myself."

Additionally, Peppers et al. (1999) pointed out that by providing interactive services, enterprises can increase their understanding of customers. One respondent indicated, "I hope that enterprises have responsible service personnel available online for immediately responding to my questions, similar to a chat room or MSN, so that I don't necessarily have to use the phone to dial a number." Finally, Peppers et al. pointed out that e-commerce sites can offer gifts to entice customers who are then willing to provide their personal information. One respondent concurred with this idea: "My willingness to register will increase because an e-commerce site provides a gift."

From the previous discussion, it is apparent that enterprises succeed at One-to-One Web-marketing by increasing the quality of user interface design to entice customer use, identifying customer information

and providing customized services to satisfy customer requirements, thereby increasing customers' sense of recognition.

### **RELATIONSHIP BETWEEN THE FACTORS AND SUCCESS**

This study identified five success factors that can have a significant effect on One-to-One Web-marketing success. First, after the separate factor scores were calculated and standardized with a mean score of 0 and a standardized deviation of 1, the 1,155 samples were divided into two groups which were designated as the upper- and lower-half groups. A t-test was then used to verify whether a significant difference exists between the mean scores of the two groups in the success of One-to-One Web-marketing. Table 6 reveals that, in the case of each factor, the mean score of the upper-half group is greater than the mean score of the lower-half group, and that the five factors all have significant difference at 0.05.

#### ***Relationship Analysis of Each Factor and Each Success Measurement Construct***

In order to further understand the relationship between each factor and One-to-One Web-marketing success, the item-total correlation between each factor and each success measurement construct were arranged as shown in Table 7. According to this data analysis indicates, there is a significant relationship between each of the five success factors and the success of One-to-One Web-marketing (See Tables 6 and 7). This demonstrates that the research constructs have high criterion validity.

TABLE 6. A Comparison of Success Factors and Non-Success Factors Through Successful One-to-One Web Marketing (Success Factors Serve as Independent Variables)

Factor	Lower Half	Upper Half	Mean Difference	Significance Level	t-Scores
1.Satisfaction of customer requirements	3.75	3.90	0.16	0.02**	3.778
2.Identification of customer differentiation	3.73	3.94	0.22	0.00**	4.719
3.Design of a quality user interface	3.76	3.90	0.14	0.00**	4.082
4.Establishment of customer recognition	3.78	3.89	0.12	0.05*	3.321
5.Provision of customized services	3.78	3.88	0.11	0.04*	2.002

\* Significant at the 0.05% level.

\*\* Significant at the 0.01% level.

TABLE 7. Item-Total Correlation for CSF and One-to-One Web-Marketing Success

	Satisfaction of Customer Requirements	Identification of Customer Differentiation	Design of a Quality User Interface	Establishment of Customer Recognition	Provision of Customized Services	Overall, the E-commerce site Provided is Relatively Successful
<b>Systems Quality</b>						
E-commerce site systems are beneficial to customers	0.14**	0.12**	0.08**	0.06*	0.07*	0.33**
E-commerce site systems are reliable	0.11**	0.10**	0.06*	0.14**	0.07*	0.18**
E-commerce site's download time is long	0.07*	0.02	0.01	0.03	0.02	0.09**
E-commerce site is easy to use	0.11**	0.14**	0.07*	0.10**	0.02	0.27**
<b>Information Quality</b>						
E-commerce site provides comprehensive information	0.12**	0.13**	0.09**	0.04	0.05	0.25**
E-commerce site provides information that is easily understood	0.15**\	0.12**	0.11**	0.10**	0.09*	0.24**
E-commerce site provides personalized information	0.09**	0.15**	0.10**	0.07*	0.07*	0.19**
E-commerce site provides information that is highly relevant to customer requirements	0.09**	0.11**	0.11**	0.06*	0.03	0.20**
E-commerce site provides information that is highly secure	0.09**	0.06*	0.03**	0.06*	0.11**	0.15**
<b>Service Quality</b>						
E-commerce site's services give the customer a sense of trust	0.12**	0.09**	0.08*	0.10**	0.01	0.25**
E-commerce site's services conform to customer requirements	0.14**	0.11**	0.09**	0.11**	0.04	0.26**
E-commerce site services are of interest to customers	0.18**	0.09**	0.10**	0.13**	0.02	0.27**

TABLE 7 (continued)						
	Satisfaction of Customer Requirements	Identification of Customer Differentiation	Design of a Quality User Interface	Establishment of Customer Recognition	Provision of Customized Services	Overall, the E-commerce site Provided is Relatively Successful
Use						
E-commerce site is relatively easy for customers to use	0.13	0.11**	0.02**	0.06*	0.01	0.31**
E-commerce site makes it relatively easy for customers to communicate	0.10**	0.10**	0.18*	0.06*	0.002	0.45**
E-commerce sites causes customers to engage in comparatively more consumption	0.17**	0.14**	0.09**	0.12**	0.04	0.38**
User Satisfaction						
E-commerce site allows customers not to have to search for other e-commerce sites	0.06	0.02**	0.006	0.004	0.06	0.24**
E-commerce site will cause customers to make repeat purchases	0.05	0.14**	0.05**	0.09**	0.08	0.23**
E-commerce site will cause customers to make repeat visits	0.03	0.06	0.07*	0.01	0.04	0.08**
Net Benefits						
E-commerce site allows customers to save costs	0.05	0.09**	0.06*	0.09**	0.003	0.25**
E-commerce site has a relatively large market share	0.06*	0.12**	0.08**	0.08**	0.05	0.24**

E-commerce site causes customers to engage in more consumption	0.15*	0.14**	0.08*	0.10**	0.08*	0.22**
E-commerce site helps customers to reduce search costs	0.16**	0.12*	0.11**	0.09**	0.10*	0.15**
E-commerce site increases customer purchase volume	0.02	0.06	0.01	0.04	0.04	0.18**
Overall, provides e-commerce sites with comparatively greater success	0.12**	0.10**	0.11**	0.09**	0.08*	1.00

\* Significant at the .05% level.

\*\*Significant at the .01% level.

Among the factors, Factor 1 (satisfaction of customer requirements), Factor 2 (identification of customer differentiation), Factor 3 (design of a quality user interface), and Factor 4 (establishment of customer recognition) appear to be relevant to each of the One-to-One Web-marketing success measurement constructs. However, in the case of Factor 5, it was discovered that although the provision of customized services is relevant to the measurement of One-to-One Web-marketing success, there is no correlation between it and the measurement constructs of service quality, user convenience and user satisfaction levels. After compiling the interview data and the opinions provided by the business people who participated in this study, it was discovered that the reason for this may be excessive or unreasonable customer expectations towards One-to-One Web-marketing. One business person may have best described those expectations: "When we are using these services we often have expectations; but these expectations often exceed what the e-commerce site is able to provide." Another businessperson agreed: "Consumers will generate excessively high expectations of One-to-One Web-marketing which will lead to the emergence of a situation not highly related to these constructs."

The results described above demonstrated that a complex relationship certainly does exist between the CSFs and One-to-One Web-marketing success. At the same time, a complicated sequential relationship exists between the constructs for measuring One-to-One Web-marketing success. DeLone and McLean (2003) asserted that a reciprocal effect exists between use and user satisfaction level, and information quality, systems quality, and service quality can influence information use and user satisfaction. This further results in an influence on use net benefit. The complexity of these relationships limit this study from being able to infer what influence the individual CSF have on individual success constructs. As a result, research into how One-to-One Web-marketing CSF influences these success measurement constructs is a topic worthy of in-depth investigation by future researchers.

## **CONCLUSIONS AND SUGGESTIONS**

### ***Conclusion***

#### ***One-to-One Web-Marketing CSF***

The primary contribution of this study is the incorporation of user perspectives to investigate five important CSFs of enterprise implemen-

tation of One-to-One Web-marketing. These five CSFs all have a significant relationship with One-to-One Web-marketing success.

This study identified the following five CSFs: (1) satisfaction of customer requirements, (2) identification of customer differentiation, (3) design of a quality user interface, (4) establishment of customer recognition, and (5) provision of customized services. Just as Liu and Arnett (2000) found, Internet users place the greatest importance on the Internet user environment. Accordingly, enterprises can, by establishing an e-commerce site with a quality design and secure transaction environment, and collecting and analyzing relevant customer data, provide products and services which conform to customer requirements. This increases users' site recognition and the success rate of One-to-One Web-marketing projects. Finally, this study recommends that these CSFs be used as a starting point when organizations are implementing One-to-One Web-marketing.

#### *Relevance to the Success of One-to-One Web-Marketing*

This study discovered the existence of a relationship between the CSFs and the One-to-One Web-marketing services success measurement constructs. This result demonstrated that users are of the opinion that providing One-to-One Web-marketing services is truly able to increase systems quality, service quality, convenience of use, user satisfaction, and net benefits to the organization. However, in the aspect of Factor 5 (provision of customized services), no correlation exists between the measurement constructs of service quality, convenience of use and user satisfaction. In exploring the causes that lead to this, it was discovered that this might be the result of excessive or unreasonable user expectations towards One-to-One Web-marketing.

#### *User Perspectives and Enterprise Perspectives—The Differences*

After comparing the research results and the literature, it was found that if the CSFs of One-to-One Web-marketing commences from the enterprise perspective, it is necessary to first know the enterprise customers (Identify), understand customer characteristics (Differentiate), provide appropriate interactive mechanisms and channels aimed at different customers (Interact), and provide customized products and services in order to satisfy different customer requirements (Customize). In other words, it is necessary to first understand the customers and provide One-to-One Web-marketing services through appropriate channels (Peppers et al., 1999).

In accordance with the research conclusions, the CSFs of One-to-One Web-marketing from the user perspectives, in addition to including the content of the above enterprise views, strengthen the establishment of customer recognition. This study discovered that when an e-commerce site is able to increase customer recognition, the customer is more likely to repeatedly visit the e-commerce site. This enables the site to collect even more customer information for analysis, which in turn allows the e-commerce site to more accurately predict customer requirements, thus increasing the organization's competitiveness.

### ***Management Implications***

This study conducted investigative interviews with ten businesspeople currently involved in providing One-to-One Web-marketing. After sharing the results of this study with these individuals, they were queried about their opinions and possible managerial implications and directions.

#### *Establishment of Information and Transaction Security Mechanisms*

After conducting an investigation from the user perspectives, it was discovered that successful One-to-One Web-marketing services require information and transaction security mechanisms if customers are going to be willing to use an e-commerce site. As expressed by one business person: "Security mechanisms are a big problem in Internet operations and it is only by resolving this that customers will engage in increased transactions or leave their personal information." Another participant pointed out, "Security concerns can be resolved through technology and marketing approaches, but while technological concerns are minimal, how to generate user trust is significant, and the establishment of an e-commerce site image should be closely linked to the incorporation of Internet security developments." Accordingly, prior to successfully implementing One-to-One Web-marketing, e-commerce sites must first establish a fundamentally sound security program if they want to increase user acceptance and willingness to use.

#### *Establishment of Service Personnel Interaction Mechanisms*

E-commerce sites currently providing One-to-One Web-marketing services all offer personalized e-mail to users, resulting in customers receiving excessive information. The excessive amount of e-mail can pre-



vent enterprises from generating interest in this personalized information among users (Peppers and Rogers, 2000). The greatest benefit of establishing interactive mechanisms comes from direct contact between sales personnel and customers. In addition to facilitating the delivery of services, it enables a more in-depth understanding of customer requirements in the interactive process. As expressed by one of the ten business people, "I have regulations in the company which state that customer e-mails must be responded to and that some representative e-mail response processes are to be put on the e-commerce site to allow customers to understand how we interact with them." Another participant added, "Employing service personnel to understand the attitudes of customers with a medium level of loyalty and, following use, what areas they feel that need to be improved or whether or not they will have other areas of need in the future; and the effects of this are much better than using the e-mail approach and customer satisfaction is also higher." As a result, e-commerce sites can use interactions between service personnel and customers to allow organizations to better understand consumer expectations and which areas the organization needs to improve to enhance the likelihood of One-to-One Web-marketing success, customer satisfaction and loyalty.

#### *Creation of User Recognition*

According to one business person, "Whether or not a service is a type of One-to-One Internet service, in addition to making a determination from an enterprise or technology perspective, of even greater importance is whether or not the users truly recognize that this service is tailor-made for them." Similarly, another participating business person stated, "Users who use our e-commerce site's community services will have a sense that they own these services and this can truly be called 'One-to-One.' " Just as our research has revealed, to increase customer e-commerce site recognition, it is necessary to first make the customers think that the e-commerce site is created for them. Moreover, one participant suggested, "To make users feel that the e-commerce site is made exclusively for them, it is necessary to greatly increase the aspects that the users themselves can control . . . even to the extent that they are allowed to operate the fruits of what they build and produce an emotional attachment to something similar to a customized layout or community." Consequently, enterprises should consider how to establish a sense of recognition to increase the chances of One-to-One Web-marketing services success.

### ***Research Limitations***

Stern (1979) contended that a person's memory is distorted to allow it to conform to a perspective that is more comfortable in the present. This means that when an respondent / participant is requested to convey information relevant to the One-to-One Web-marketing with which he/she is involved, it is possible that certain limitations, or because the incident is of importance to the respondent / participant or has recently transpired, will produce a distortion in the information which is collected (Emory, 1980). Therefore, in this study, it is possible that a One-to-One Web-marketing project is thought to be successful because those involved had a very good experience in the user process. In other words, it is possible that because the respondent/participant has already had a good or bad experience, this leads to the research results being over- or underrated. In light of this limitation, this study incorporated "averages" into the lower-half group in an effort to reduce any potential errors that this effect may have produced.

Moreover, another source of errors in this study concerns the accuracy of the participants' answers. Assael and Keon (1982) demonstrated that this type of error is a response error that involves problems of memory and reliability. This study employed many methods, such as adopting pre-testing and designing a clear and easily answered page layout for the questionnaire, in order to ensure the accuracy of the study. However, these measures alone do not eliminate all sources of errors. This, therefore, represents another limitation of this study.

Finally, this study incorporated user perspectives to investigate the CSFs of One-to-One Web-marketing. By analogy, the results were applied to an enterprise perspective. Also, the study samples were consumers who have experienced One-to-One Web-marketing services; therefore, it may not be possible to make an inference about those consumers who have not previously experienced these services. To conclude, although the study has endeavored to increase its generalizability, as the majority of the interview samples were students, it is possible that the research results may be unsuitable to non-student users. This is a limitation in the scope of the study.

### ***Future Research Direction***

This study creates a foundation of research that can be pursued in many different directions. First, this study focused on user perspectives of One-to-One Web-marketing. Subsequent research can focus on CSF

of One-to-One Web-marketing services from enterprise perspectives or non-student samples and compare them with user perspectives, such as the influence of Internet browse time. Subsequent researchers can likewise focus on different types of One-to-One Web-marketing services in order to conduct a comprehensive comparison and verification to understand the deviations among different One-to-One Web-marketing service models. Finally, this study uncovered the existence of complex relationships between the CSF and the measurement of One-to-One Web-marketing services success constructs. These relationships also await further exploration by subsequent research.

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## APPENDIX

### ***QUESTIONNAIRE***

1. Your gender?

☐ male ☐ female

2. Your age?

☐ below 15 ☐ 16-20 ☐ 21-25 ☐ 26-30

☐ 31-35 ☐ 36-40 ☐ 41-45 ☐ 46-50

☐ 51-55 ☐ over 56

3. Your education level

☐ Elementary School or Lower ☐ Junior High School ☐ Senior High School  
(Vocational College)

☐ Undergraduate ☐ MA or Higher

4. Your average time spent on browsing e-commerce sites daily

☐ Less Than 1 Hr. ☐ 1-3 Hrs ☐ 4-6 Hrs ☐ 7-9 Hrs ☐ 10-12 Hrs

5. Which factor best able to influence online purchases?

☐ Convenient ordering process

☐ Short delivery time

☐ Detailed product description

☐ Product price

☐ Secure credit card

☐ Transactions wide product category

☐ Convenient product searching

6. Which method of encouraging consumers to provide information?

☐ Free rewards

- ☐ Prizes or gifts
- ☐ Convenient purchasing
- ☐ Process merchandise
- ☐ Coupons discount

7. Which method of payment consumers willing to use?

- ☐ COD
- ☐ Credit cards
- ☐ Postal
- ☐ Bank account transfers
- ☐ Payment installments

### **Independent Variables**

Please indicate the extent to which you agree with the flowing statements.

1. Provide gifts to induce customers to register proactively
2. Establish individual databases
3. Collect additional customer information
4. Proactively analyze customer information
5. Satisfy customer service requirements
6. Select customers worthy of dealing with
7. Provide services directed at customer differences
8. Differentiate customer e-commerce site contributions
9. Understand customers' e-commerce site consumption
10. Provide an easy user interface
11. Provide links to other e-commerce sites
12. Provide product order tracing
13. Provide for rapid acquisition of required product catalogue
14. Proactively contact target customers
15. Provide relevant community links
16. Provide mechanisms for enterprise-customer interaction, e.g., chat room.
17. Eliminate customers' need to re-enter personal information
18. Inquire as to how customers wish to contact the e-commerce site
19. Provide dedicated individual e-commerce site space
20. Provide personalized e-mail
21. Inquire of customers how to improve products and services
22. Provide functions for addressing customer complaints
23. Provide product order tracing
24. Provide personalized product information
25. Provide customized service to save the customer time
26. Recommend dedicated products to individual customers
27. Provide a user interface that conforms to all requirements
28. Satisfy the services that the customer wants



## APPENDIX (continued)

29. Proactively update customer information
30. Provide customers unexpected services
31. Have offline payment, e.g., cash on delivery
32. Provide clear online product catalogue
33. Create flawless transaction security mechanisms
34. Have mechanisms for guaranteeing information security
35. Let customers feel e-commerce sites are designed for themselves

**Dependent Variables**

Please indicate the extent to which you agree with the following statements.

1. E-commerce site systems are beneficial to customers
2. E-commerce site systems are reliable
3. E-commerce site's download time is long
4. E-commerce site is easy to use
5. E-commerce site provides comprehensive information
6. E-commerce site provides information that is easily understood
7. E-commerce site provides personalized information
8. E-commerce site provides information that is highly relevant to customer requirements
9. E-commerce site provides information that is highly secure
10. E-commerce site's services give the customer a sense of trust
11. E-commerce site's services conform to customer requirements
12. E-commerce site services are of interest to customers
13. E-commerce site is relatively easy for customers to use
14. E-commerce site makes it relatively easy for customers to communicate
15. E-commerce sites causes customers to engage in comparatively more consumption
16. E-commerce site allows customers not to have to search for other e-commerce sites
17. E-commerce site will cause customers to make repeat purchases
18. E-commerce site will cause customers to make repeat visits
19. E-commerce site allows customers to save costs
20. E-commerce site has a relatively large market share
21. E-commerce site causes customers to engage in more consumption
22. E-commerce site helps customers to reduce search costs
23. E-commerce site increases customer purchase volume
24. Overall, provides e-commerce sites with comparatively greater success



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